

What is claimed is:

1. A light-scattering sheet comprising a light-scattering layer which comprises a plurality of resins varying in refractive index and scatters an incident light isotropically, wherein the light-scattering layer has a ratio of a linearly transmitted light to an incident light of 0.1 to 15 % and has a phase separation structure having an average interphase distance of 3 to 15 μm .

2. A light-scattering sheet according to Claim 1, wherein the light-scattering layer expresses a light-scattering intensity profile having substantially flat area at scattering angle θ of 3 to 12° from a scattering center.

3. A light-scattering sheet according to Claim 1, wherein the light-scattering layer have a ratio of a linearly transmitted light to an incident light of 3 to 10 %, a phase separation structure having an average interphase distance of 3 to 12 μm and an area where a light-scattering intensity is substantially uniform at scattering angle θ of 4 to 8° from a scattering center.

4. A light-scattering sheet according to Claim 1, wherein in the light-scattering layer, the scattering angle range that an intensity of a diffused light is not less than 80 % relative to a maximum intensity of a diffused light is 8 to 25° in respect to a light-scattering property.

5. A light-scattering sheet according to Claim 1, wherein the light-scattering layer has a phase separation structure composed of a plurality of resins varying in refractive index, and has a bicontinuous phase structure
5 formed by spinodal decomposition or an intermediate structure between the bicontinuous phase structure and a droplet phase structure.

6. A light-scattering sheet according to Claim 1, which comprises a transparent or reflective support and
10 the light-scattering layer formed on at least one side of the support.

7. A process for forming the light-scattering layer having the light-scattering properties recited in Claim 1, which comprises subjecting a resin layer
15 composed of a plurality of resins varying in refractive index to spinodal decomposition.

8. A liquid crystal display device which comprises a liquid crystal cell having a liquid crystal sealed therein, a lightening means for illuminating the liquid
20 crystal cell due to reflection or emergence disposed behind the liquid crystal cell, and a light-scattering sheet recited in Claim 1 disposed forwardly of the lightening means.

9. A liquid crystal display device according to
25 Claim 8, which comprises a liquid crystal cell having a liquid crystal sealed therein, a reflecting means for reflecting an incident light disposed behind the liquid

09964337 092504

crystal cell, and a light-scattering sheet recited in Claim 1 disposed forwardly of the reflecting means.

10. A liquid crystal display device according to Claim 8, wherein a polarizing plate is disposed forwardly of the liquid crystal cell, and a light-scattering sheet recited in Claim 1 is disposed between the liquid crystal cell and the polarizing plate.

11. A light-scattering sheet according to Claim 1, wherein the light-scattering layer comprises a first resin selected from the group consisting of a cellulose derivative and a (meth)acrylic resin, and a second resin selected from the group consisting of a styrenic resin, an alicyclic olefinic resin, a polycarbonate-series resin and a polyester-series resin.

12. A light-scattering sheet according to Claim 11, wherein the weight ratio of the first resin to the second resin is 10/90 to 90/10.

13. A light-scattering sheet according to Claim 1, wherein the light-scattering layer has a ratio of a linearly transmitted light to an incident light of 0.1 to 13 %, has a phase separation structure having an average interphase distance of 3 to 12 μm , and expresses a light-scattering intensity profile having substantially flat area at scattering angle θ of 3 to 11° from a scattering center, and wherein the fluctuation width of light-scattering intensity in the flat area is 0 to 20 when a maximum light-scattering intensity is 100.

14. A process according to claim 7, which comprises removing a solvent from a liquid phase composed of a plurality of resins varying in refractive index and subjecting the phase to spinodal decomposition.

09564307.09501
10550.482960